Claims

1. A device for recognizing particles in milk comprising a measuring surface and a housing, characterized in that the measuring surface is structured so as to cause the milk to spread on the measuring surface in that the measuring surface has a specific surface roughness.

2. The device according to claim 1, characterized in that the surface roughness of the measuring surface has a typical height in the range of 0.3 µm to 20 µm and preferably a roughness in the range between 0.5 µm and 5 µm and particularly preferably, a roughness between approx. 2 µm and 4 µm.

3. The device according to claim 1 or 2, characterized in that the surface roughness of the measuring surface has a value of 27 to 30 according to *VDI* 3400, edition 1975-06.

4. The device according to at least one of the preceding claims, characterized in that the measuring surface is inclined relative to the horizontal at an angle between 0° and 10°, preferably approx. 2°.

5. The device according to at least one of the preceding claims, characterized in that the measuring surface comprises at least one layer of a hydrophilic material.

6. The device for recognizing particles in milk in particular according to at least one of the preceding claims,
having a measuring surface and a housing and an illuminating device having at least one first light-emitting area and at least one second light-emitting area,
wherein a central light beam of the first light-emitting area is directed at the side of the measuring surface opposite the first light-emitting area and
wherein a central light beam of the second light-emitting area is directed at the side of the measuring surface opposite the first light-emitting area.

7. The device for recognizing particles in milk in particular according to at least one of the preceding claims having a measuring surface and a housing, characterized by a

temporary storage to receive a milk sample from which specific quantities of milk can repeatedly be drained for measuring.

8. The device according to the preceding claim, characterized by at least two opposite illumination units which light the sample holder at such an angle that the focus of the light beams is incident on the opposite side of the measuring surface.

9. The device according to at least one of the preceding claims, characterized in that at least one diffuser unit is provided to obtain diffused light.

10. The device according to at least one of the preceding claims, characterized in that at least one detector means is provided.

11. The device according to at least one of the preceding claims, characterized in that a sight glass is disposed above the measuring surface.

12. The device according to at least one of the preceding claims, characterized in that the sight glass is positioned at an angle to the horizontal of larger than 20°, preferably larger than 30° and particularly preferably between 40° and 60°.

13. The device according to at least one of the preceding claims, characterized in that the sight glass is heatable.

14. The device according to at least one of the preceding claims, characterized in that the distance between the detector means and the sight glass is shorter than a mean distance between the sight glass and the measuring surface wherein the distance between the detector means and the sight glass is preferably shorter than a shortest distance between the sight glass and the measuring surface.

15. The device according to at least one of the preceding claims, characterized in that the sight glass is coated or nano-coated to improve the running off of any present drops.

16. The device according to at least one of the preceding claims, characterized in that a rinsing nozzle is provided to rinse preferably the sight glass and/or the sample holder with a cleaning agent.

17. The device according to at least one of the preceding claims, characterized in that a nose is provided at an inlet area to prevent that the sight glass is splashed.

18. The device according to at least one of the preceding claims, characterized by a temporary storage to temporarily store a milk sample to be examined.

19. The device according to at least one of the preceding claims, characterized in that the milk sample to be examined can be drained in multiple portions wherein each portion may be evaluated to obtain better statistical reliability of the analysis result.

20. The device according to at least one of the preceding claims, characterized in that the temporary storage is connected with a valve through which air can be allowed to enter for conveying the milk portion to be examined to the measuring surface.

21. The device according to at least one of the preceding claims, characterized in that a valve means allows to feed the measuring housing in specific stages.

22. The device according to at least one of the preceding claims, characterized by at least one control means for controlling.

23. The device for recognizing particles in milk in particular according to at least one of the preceding claims, comprising a measuring surface and a housing, characterized in
that above the measuring surface there is disposed a partition wall which is inclined to the horizontal and optically transmissible, and through which the measuring surface can be viewed.

24. A method for recognizing particles in milk, characterized in that a milk sample to be examined is conveyed to a measuring surface and an image of the measuring surface is captured, and at least one object recognition rule is employed to distinguish at least two types of detected particles.

25. The method according to claim 24 wherein a particle count serves to make a qualitative and/or quantitative statement.

26. The method according to claims 24 or 25, wherein at least one area proportion value of at least one particle type is determined.